

REMARKS

1. Allowable Subject Matter

The Examiner is thanked for indicating that SEQ ID NO:595 is free of the prior art, and that claim 27, consequently, is allowable if rewritten in independent form.

2. General Matters

2.1. We have amended claim 1 to overcome the objections set forth on page 3 of the action.

2.2. Claim 39, as examined, read as follows:

The peptide according to claim 1, wherein  
said peptide has the sequence  
NQGRHFCGGALIHARFVMTAASCFQ (SEQ ID NO: 594).

It has come to our attention that the sequence recited in claim 39, as a string of amino acids, is not the sequence set forth under cited SEQ ID NO:594 in the Sequence Listing.

Consequently, theoretically we could amend claim 39 to insert the sequence appearing in the sequence listing as SEQ ID NO:594. (This is not an addition of "new matter" as the sequence listing was part of the application as filed.)

However, claim 1 requires a peptide of at most 44 amino acid residues, with a pair of Cys separated by 15 non-Cys residues. (Note Cys between X2 and X3, and between X17 and X18.) The real SID 594 is 78 amino acids, with Cys at positions 27, 57, and 63. Hence, it is inconsistent with claim 1. Accordingly, claim 39 has been cancelled.

This is without prejudice to pursuing the "real" SID 594 in a divisional application, in a claim without inconsistent limitations.

2.3. Claim 1 has been amended, with reference to X1, X9 and X19, to delete the superfluous references to groups 2-4. Group 5, already recited, encompasses groups 1-4.

3. Prior Art Issues

Claims 1, 39, 53 and 73 stand rejected as anticipated by

Pereira (1993) (AJ). The Examiner asserts that Pereira's abstract discloses a sequence, corresponding to amino acids 20-44 of OA p. 37, which is identical to our SEQ ID NO:594.

The Pereira sequence is

NQGRHFCCGALIHARFVMTAASCFG  
20 25 30 35 40

The Examiner is correct that the sequence set forth in examined claim 39, as a string of amino acids, was identical to the sequence set forth in the abstract of Pereira et al. (ref. BP), there identified as residues 20-44 of the CAP37 protein. However, that is not true of the "real" SEQ ID NO:594, which is identified as residues 96-173 of pHBP and begins "Arg Glu Ala Arg Leu...." The real SEQ ID NO:594 is not similar to Pereira (e.g., it doesn't contain any His).

The more relevant sequences are those based on AAs 20-44 of wild-type pHBP, which is indeed the Pereira sequence.

However, the sequence listing includes only mutants of that sequence:

593: N20K, H24P, A33P, Q44R

595: N20K, Q44R

596: N20K, H24P, Q44R

597: N20K, A33P, Q44R

598: N20K, H24P, A33P, Q44R

599: reversed sequence, not as implied by the Sequence Listing, of wild type, but of one of the mutants.

600: identified in the Sequence Listing as a K20N mutant, but 20N is revertant to wild type; does at least feature H24P and Q44R.

601: identified in the Sequence Listing as a R44Q mutant, but 44Q is revertant to wild type; does at least feature N20K and H24P.

602: identified in the Sequence Listing as a K20N/R44Q mutant, but those are revertant to wild type; does at least feature H24P.

603: R34Q, Q44R.

As previously explained, while claim 39 did recite the Pereira sequence, it was not in fact the sequence SEQ ID NO:594 as implied. Claim 39 has been cancelled.

Our pHBP-based sequences 593, 595-598 and 601-603 feature one or more of the following mutations:

N20K

H24P

A33P

R34Q

Q44R

(The "reverse" sequence 599 will be discussed separately.)

The Examiner reads NLQRH (20-24) as X1, A33 as X9, R34 as X10 and Q44 as X19.

X1 is permitted to be (a) a sequence of 2-5 AAs or (b) a group 2 (R/K) residue.

X9 is a group 1 (A/G/S), 3(H/L/M/F/P/T/V/W/Y) or 5 (A/N/R/Q/H/I/L/K/M/F/P/S/T/W/Y/V) residue.

X10 is a group 2, 3 or 4 (N/Q) residue.

X19 is (a) a sequence of 2-5 AAs or a single group 2, 4 or 5 residue.

There is a proviso that if X1 includes P (it doesn't in Pereira, but it does in the H24P mutants), then X19 is Q.

We more fully compare SID 593, 595-603 with Pereira, the hNE (20-44) derived sequences 604 and 605, and the EAA01962 (20-44) derived sequence 606 in the table below:

Claim	X1	X9	X10	X19
pHBP'#'ing	(20-24)	(33)	(34)	(44)
SID #'ing	(1-5)	(14)	(15)	(25)
593	KqgrP	P	r	R
595	Kqgrh	a	r	R
596	KqgrP	a	r	R
597	Kqgrh	P	r	R
598	KqgrP	P	r	R

599	R(1)	F(10)	r(11)	PRGQK (21-25)
600	nqgrP	P	r	R
601	KqgrP	P	r	q
602	nqgrP	P	r	q
603	KqgrP	P	Q	R
Pereira	nqgrh	a	r	q
604	LrgGH	P	N	A
605	RrgGh	R	N	N
606	RSRQY	Q	r	A
Claim 1 X definitions	2-5 AA or 1AA of Grp2	Grp 5, 1, 3	Grp 2, 3, 4	2-5AA or 1AA of Grp 5, 2, 4

(Deviations from Pereira in upper case).

In view of the foregoing, we have amended claim 1 to require that at least one of the following conditions applies,

- (a) X19 is Arg(R) or Ala (A),
- (b) X9 is Pro (P), Arg (R) or Gln (Q),
- (c) X19 is Gln(Q) and X1 includes Pro (P),
- (d) X19 is 2-5 Aas, or
- (e) X10 is Asn(N) or Gln (Q).

X19=R is supported by the pHBP (20-44) mutants which feature the mutation Q 44R, e.g., SID 593, 595 (the originally elected species), 596, 597, 598, 600. X19=A is supported by SID 604 and 606.

X9=P is supported by the pHBP (20-44) mutants with A33P, i.e., 593, 597, 598 and 600-3; the HNE-based sequence SID 604 also satisfies X9=P. X9=R is supported by hHNE (20-44) derived sequence SID 605. X9=Q is supported by the EAA01962 (20-44) derived sequence SID 606.

X19=Q and X1 includes proline is supported by the mutants SID 593, 601 and 602. Note that (c) is the converse of the existing proviso that "when X1 includes Pro, then X19 is Gln".

Also note that in SID596, 598 and 600-3, X1 includes Pro.

X19 being 2-5 AAs is one of the alternatives specified in original claim 1, and is exemplified by SID 599.

Finally, X10 being Asn is supported by SID 604 and 605, and being Gln by SID 603.

Claim 1 thus distinguishes Pereira, who teaches X1=nqgrh X9=a, X10=r, and X19=q (single AA).

New claim 74 defines conditions (aa)-(dd) which are based solely on the pHPB (20-44) mutants. Claims 75-78 are further limiting. Claim 79 relates to X10, see SID 603-5.

#### 4. Indefiniteness Issues

The Examiner is confused by the use of X. The intent was that the limitations of X apply mutatis mutandis to each of X1-X19.

We have deleted the definition of "X" and instead recited,

"(1) each of X1 and X19 is, independently, either a sequence consisting of 2-5 amino acid residues or a single amino acid residue, and

"(2) each of X2-X18 is independently, a single amino acid residue".

Also we have moved the definitions of groups 1-5 to follow those of X1-X19.

#### 5. Rejoinder

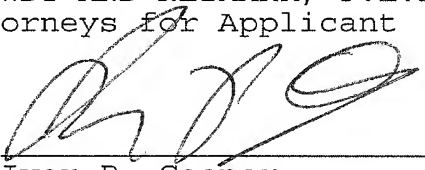
5.1. We respectfully submit that in view of the amendments to claim 1, claim 1 is allowable over the prior art, and consequently the method-of-use claims 57 and 58 should be rejoined, pursuant to MPEP 821.04. Likewise, new method-of-use claims 80 and 81, dependent on 77 and 27, respectively, should be examined. (Claim 27 has already been deemed allowable.)

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5.2. Likewise, since claim 1 is an allowable claim generic to unelected species claims 28-38, 40, the latter claims should also be rejoined.

Respectfully submitted,

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